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Calorimetric determination of the enthalpy of specific interaction of chloroform with a number of proton-acceptor compounds

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Abstract

Calorimetry was used to measure the enthalpies of solution of chloroform in various proton-acceptor solvents and, vice versa, proton-acceptors in chloroform. Based on a previously proposed equation, the enthalpies of specific interaction were calculated and compared with the published data on the enthalpy of hydrogen bonding of chloroform with various proton-acceptor solvents. The composition of the H-bonded complexes mainly formed during the dissolution of proton-acceptor solutes in chloroform was established. It was demonstrated that the dissolution of ethers in chloroform is predominantly accompanied by the formation of 1: 1 complexes, while the dissolution of acetone, dimethylformamide, and dimethyl sulfoxide in chloroform gives rise to more complex associates. © Nauka/Interperiodica 2006.

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